

MICROFLUIDIC DEVICES AND METHODS FOR PRODUCING PULSED MICROFLUIDIC JETS IN A LIQUID ENVIRONMENT

Abstract of Disclosure

Microfluidic devices and methods for their use in producing pulsed microfluidic jets in a fluid environment are provided. The subject microfluidic devices are characterized by the presence of a microfluid chamber at their distal ends. The microfluid chamber is bounded by an opening at one end, a vapor producing means opposite the opening, and side walls between the opening and the vapor producing means. The microfluid chambers are further characterized in that the only way fluid can exit the microfluid chambers is through the opening. In using the subject devices to produce a fluid jet in a fluid environment, the chamber is first contacted with the fluid environment. The vapor producing means is then actuated in a manner sufficient to produce a vapor bubble in the chamber which, in turn, produces a microfluidic jet in the fluid environment. The subject devices and methods find use in a variety of different applications, e.g., cutting tissue, introducing fluid into a cell, and the like.

Figures